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# E A R L Y EXPERIENCES E L E V A T E EVERYTHING

EARLY BRAIN & CHILD DEVELOPMENT  
AND THE FUTURE OF SOCIETY

**DIPESH NAVSARIA**, MPH, MSLIS, MD



DEPARTMENT OF PEDIATRICS  
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SCHOOL OF LIBRARY AND INFORMATION STUDIES  
UNIVERSITY OF WISCONSIN-MADISON

EARLY BRAIN & CHILD DEVELOPMENT LEADERSHIP WORKGROUP  
AMERICAN ACADEMY OF PEDIATRICS



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Live-tweeting encouraged!

# DISCLOSURE

I have **no** relevant financial relationships to disclose.

I will **not** discuss off-label use or investigational use in my presentation.

Although...





I don't know if “mouthing” is an FDA-approved use of board books.



“Oh, that’s so nice...”  
**CRITICAL**

# The Science

# The Principles of Solutions

# The Practice of Solutions

# The Call



*First, a story...*



# EARLY BRAIN AND CHILD DEVELOPMENT

## The Science

# The AAP's EBCD Initiative

**“Building Brains, Forging Futures”**  
“It’s all about Nurturing Relationships”

Urgency

The Essential Role of “Us”

The background of the slide is a faded, semi-transparent version of Michelangelo's famous fresco, "The Creation of Adam". It depicts Adam on the left, reclining on a rocky surface, and God on the right, reclining on a cloud and reaching out with his hand towards Adam. The title "EARLY BRAIN AND CHILD DEVELOPMENT" is overlaid in large, white, sans-serif capital letters across the center of the image.

# EARLY BRAIN AND CHILD DEVELOPMENT

from *The Science of Early Childhood Development*  
National Scientific Council on the Developing Child, 2007

...the mind is its own place  
...like a mirror of Hell; a H  
~ John Milton: "Para



# EARLY BRAIN AND CHILD DEVELOPMENT

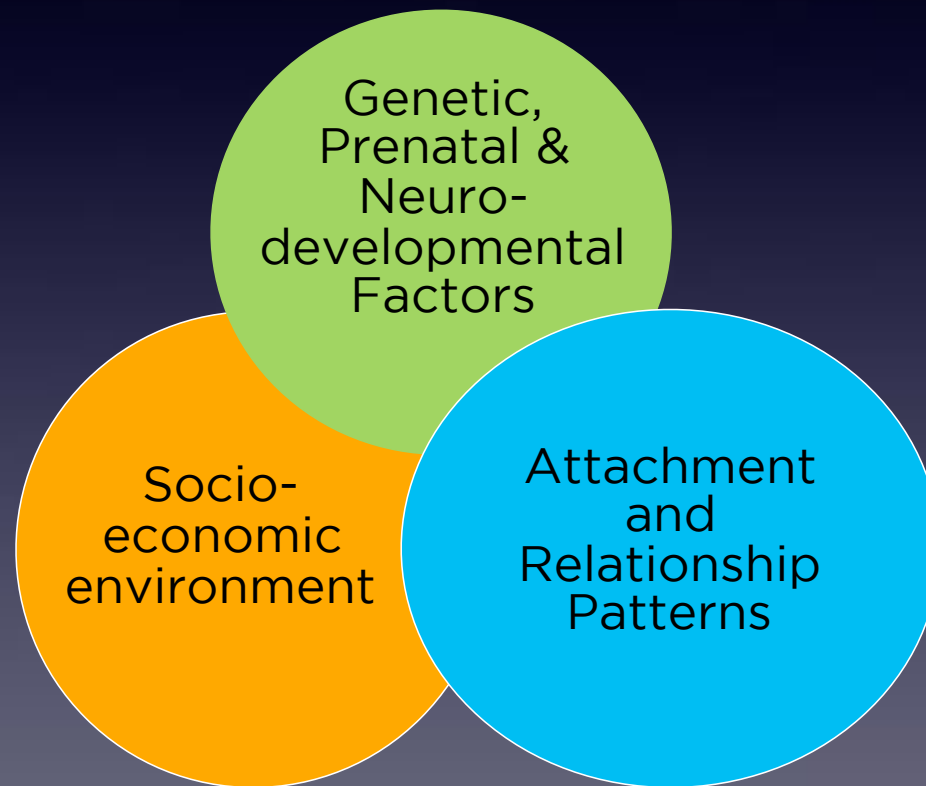
1

Child development is a foundation for **community** development and **economic** development, as capable children become the foundation of a prosperous and sustainable society.

2

Brains are built **over time**.

# The **3-legged stool** for developmental and health trajectories





# EARLY BRAIN AND CHILD DEVELOPMENT

3

The interactive influences of **genes** and **experience** literally shape the architecture of the developing brain and the active ingredient is the “**serve and return**” nature of children’s engagement in **relationships** with their parents and other caregivers in their family or community.





# EARLY BRAIN AND CHILD DEVELOPMENT

## 4

Both brain architecture and developing abilities are built “from the bottom up” with simple circuits and skills providing the **scaffolding** for more advanced circuits and skills over time.

**“play is the work of infancy”**  
— T Berry Brazelton

# EARLY BRAIN AND CHILD DEVELOPMENT

## 5

Toxic stress in early childhood is associated with **persistent** effects on the nervous system and stress hormone systems that can **damage developing brain architecture** and lead to lifelong problems in learning, behavior and both physical and mental health.

# ADHD or Adversity?



Impulsive

Can't plan ahead

Anxious

Can't delay gratification

Labile mood

Poor memory



# EARLY BRAIN AND CHILD DEVELOPMENT

6

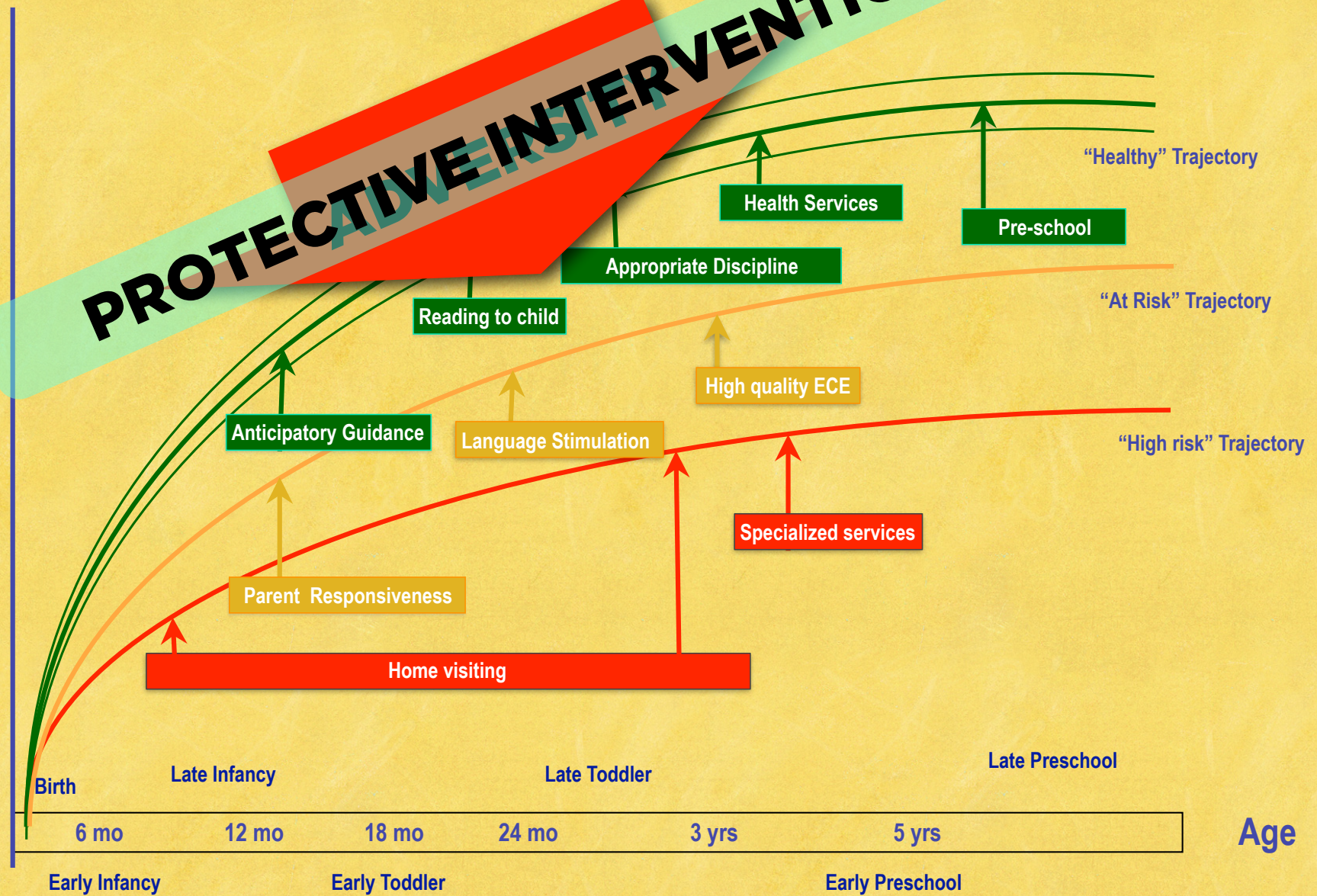
Creating the right conditions for early childhood development is likely to be **more effective and less costly** than addressing problems at a later age.

Talent is equally distributed  
throughout the population.

Opportunity is not.

# PROTECTIVE INTERVENTIONS

Developmental Progress



# **Three** Promising Domains for EBCD Innovation

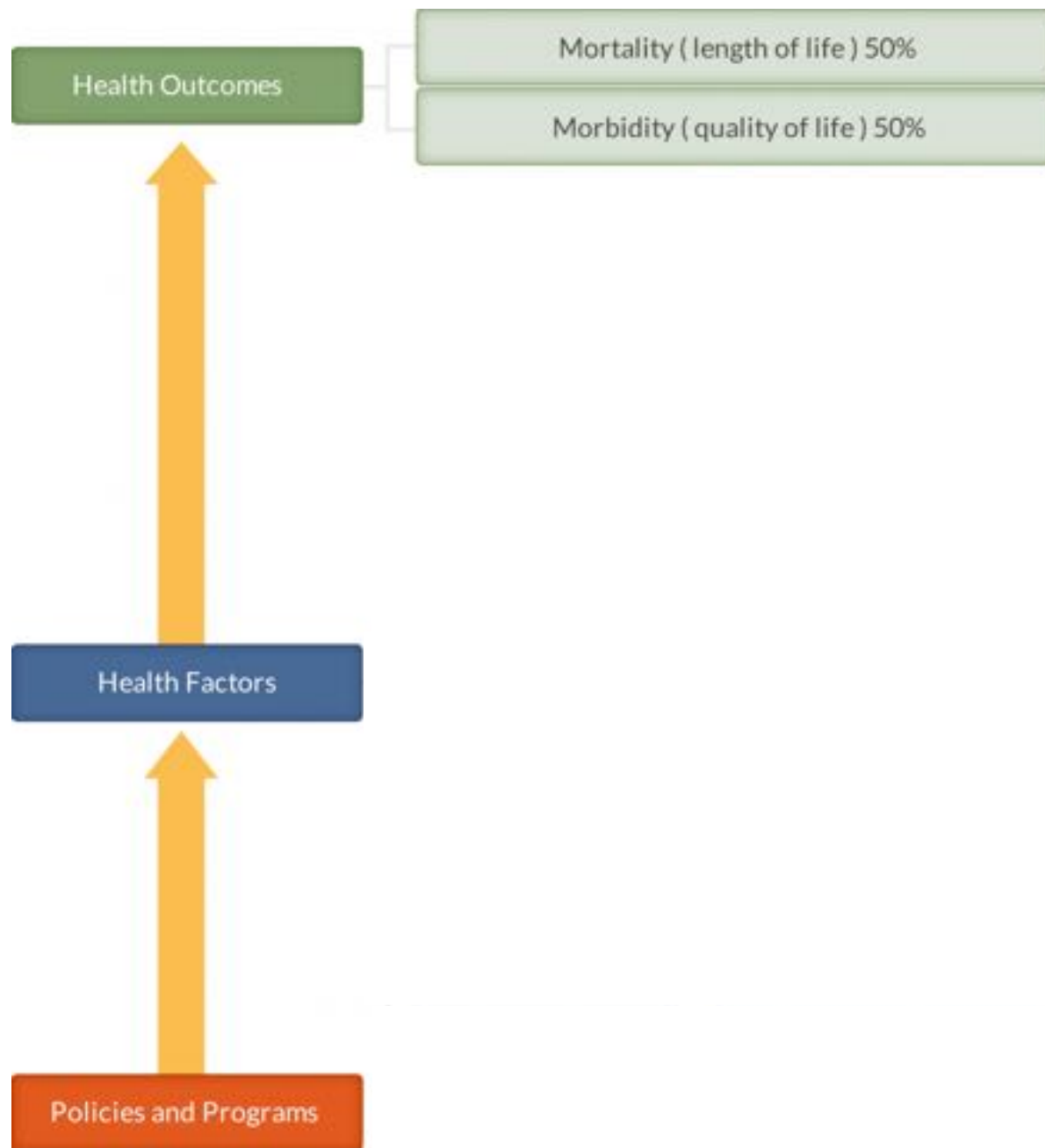
Jack Shonkoff, MD

**Reduce emotional and behavioral barriers to learning.**

**Enhance the healthy development of children by transforming the lives of their parents.**

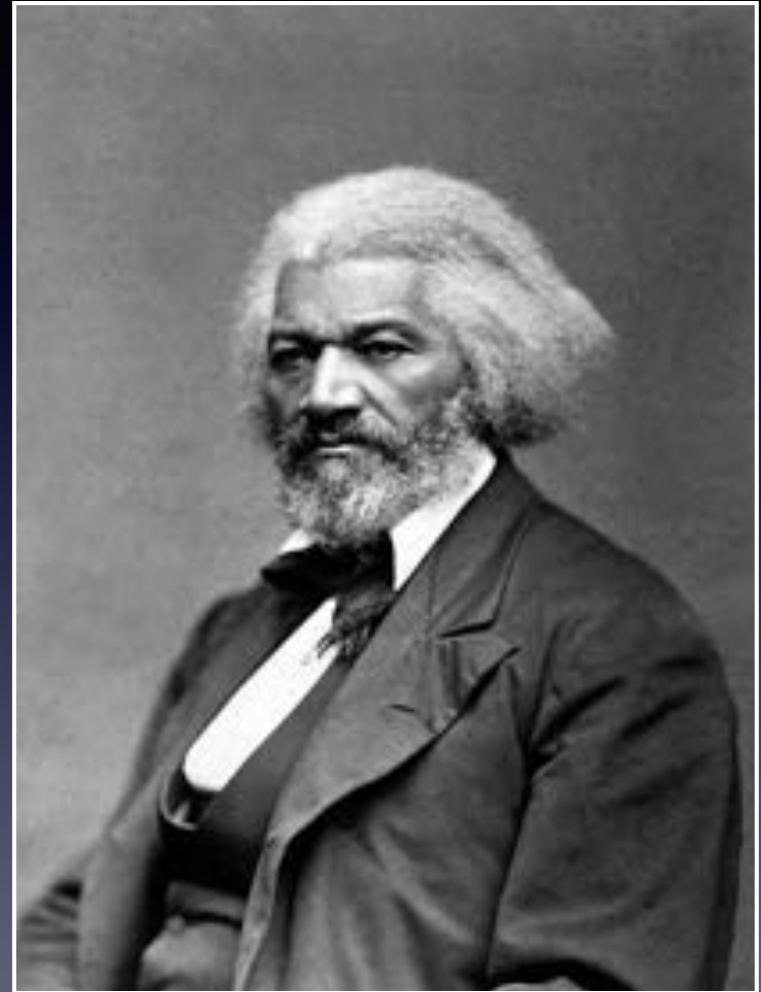
**Reconceptualize the health dimension of early childhood policy and practice.**





**“It is easier to build  
strong children than to  
repair broken men.”**

**— Frederick Douglass  
(1817–1895)**



**What can we do about it?**



Principles of

~~The~~ Solutions



We **need** solutions which...

Build capabilities

Build capacities

Are based in homes  
& communities

Address root causes

Have long-term effects

Address prevention

Leverage the  
first 1000 days

Are evidence-guided

Are scalable

# Clinical Practice

<b>PEDIATRICIANS are Encouraged to →</b>		<b><u>E</u>xplore the child's environment</b>		<b><u>B</u>uild relationships / reciprocity</b>	
<b>General Principles →</b>		<b>What pediatricians might briefly assess during well child care</b>		<b>How pediatricians might strengthen the parent-child bond or attachment</b>	
<b>Brief Description</b> <b>Well Child Care Visit</b> ↓	<b>Brief Description</b> →	<b><u>C</u>ultivate development</b>		<b><u>D</u>evelop parenting confidence</b>	
		<b>What pediatricians might teach parents about development</b>		<b>How pediatricians might support parents as they nurture their child's development</b>	
<b>Prenatal/Newborn/Week 1</b>	Assess foundation: *Food and sleep *Safety *Social and emotional supports *Strengths and barriers to success	Assess for food (planned breastfeed?), safety, parental supports	Baby's brain	quiet alert state	parented. Explore what they plan TO do and NOT to do as parents.
<b>2-4 weeks</b>	Assess overall parental well-being (maternal depression or substance use?)	Encourage responsive caregiving (responding promptly to cries of distress builds trust)		Prepare parent for the emerging social smile	Find opportunities to reassure and praise the parents, and encourage them to support each other
<b>2 months</b>	Assess for family adjustment – parent self-care, return to work/childcare, time with partner, impact of new infant on siblings	Encourage smiling back at the baby's social smile (the beginning of the parent-child interaction, or "dyadic dance," that leads to cooing, feeding and speaking)		Anticipate cooing conversations	Enjoy interactions with an increasingly social baby

# Clinic? / Hospital? / Home Visiting

## Resilience Training (7 Cs)

competence  
connectedness  
contribution  
control

confidence  
character  
coping

## Optimism

Emotional coaching

Positive Parenting

Parent-Child Home

Play and Learn

**Poverty-aware approaches to care**

# Community

EBCD education

Investment in new strategies

Invest in community-based mentoring activities

after-school programs

Big Brother/Big Sister

Little League

gymnastics

martial arts



# Outside the Clinical Realm

Intentional Skill Building

Invest in EI programs

Education for those in judicial/foster care systems

Collaborate with social workers, mental health, etc.

Policy & Programmatic Changes

Advocacy

# Treatment

Traumatic Stress networks

Appropriately trained professionals

Insurance coverage for services

# BUILDING ADULT CAPACITIES





My personal obsession right now is how disconnected we are from what we really need to be talking about with poverty. We talk about work or training for parents, or we talk about early childhood for kids. **But I don't see how we can help the children without trying to help their parents as well.** We have to have a serious national discussion about helping families together.

— Paul Krugman

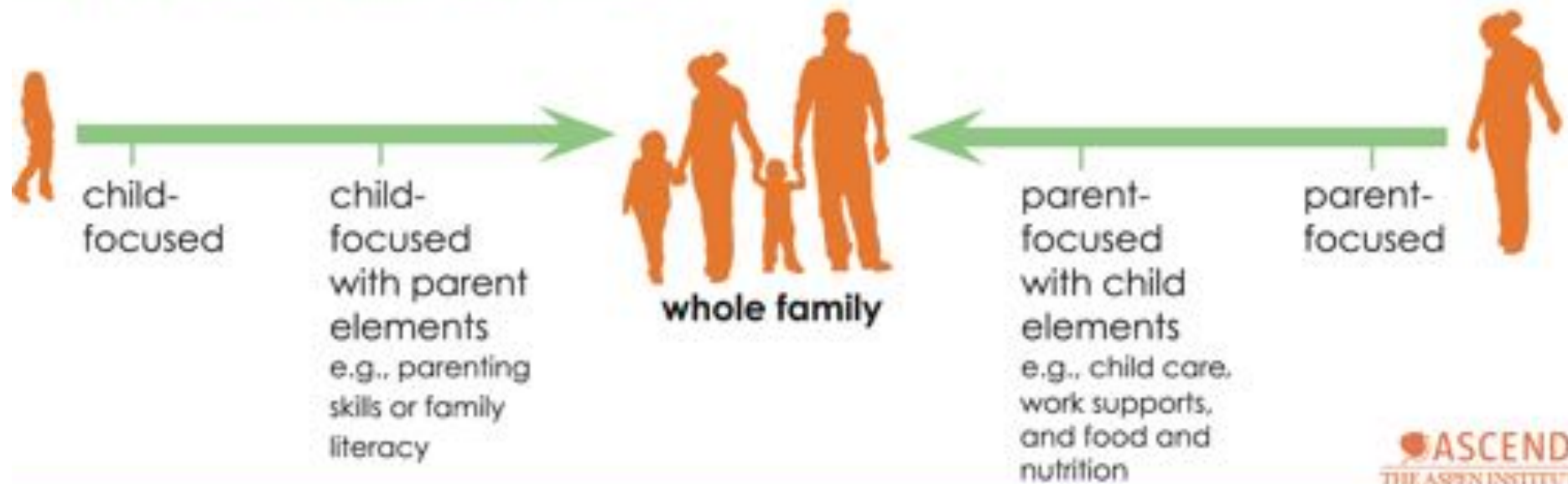
Nobel Prize Winner and Columnist, New York Times



THE ASPEN INSTITUTE

**WE ENVISION** **AN AMERICA**  
**IN WHICH A LEGACY OF ECONOMIC**  
**SECURITY AND EDUCATIONAL**  
**SUCCESS** **PASSES**  
**FROM**  
**ONE GENERATION TO THE NEXT.**

## The Two-Generation Continuum





# TWO OPEN WINDOWS

## INFANT AND PARENT NEUROBIOLOGIC CHANGE



Parents (especially first time parents) self-report high levels of anxiety and concern over their infant's well-being in the first year of life.

Even in “low risk” families, this anxiety and concern is often coupled with financial demands, sleep deprivation, and changes in the relationship between parents.

Difficulty managing the stress of the transition to parenting is associated with:

- Risk for harsh parenting
- Risk for relationship difficulties
- Risk for serious postpartum mood disorders

# THREE CIRCUITS

New mothers and fathers during the first few months postpartum exhibit structural growth of the **reward circuit**.

The amount of the growth is associated with positive feelings mothers reported about their baby (e.g. beautiful, perfect).

More functional brain activity in this region also occurs when looking at pictures of one's own vs. other infants.

# THREE CIRCUITS

New mothers and fathers exhibit neural plasticity in the **social information circuit** including structural increases.

New parents also exhibit heightened responses in this circuit to infant cries and images of their infant.

**These changes may support understanding of infant emotional and social cues during interactions, and in appropriately responding to the cues.**

# THREE CIRCUITS

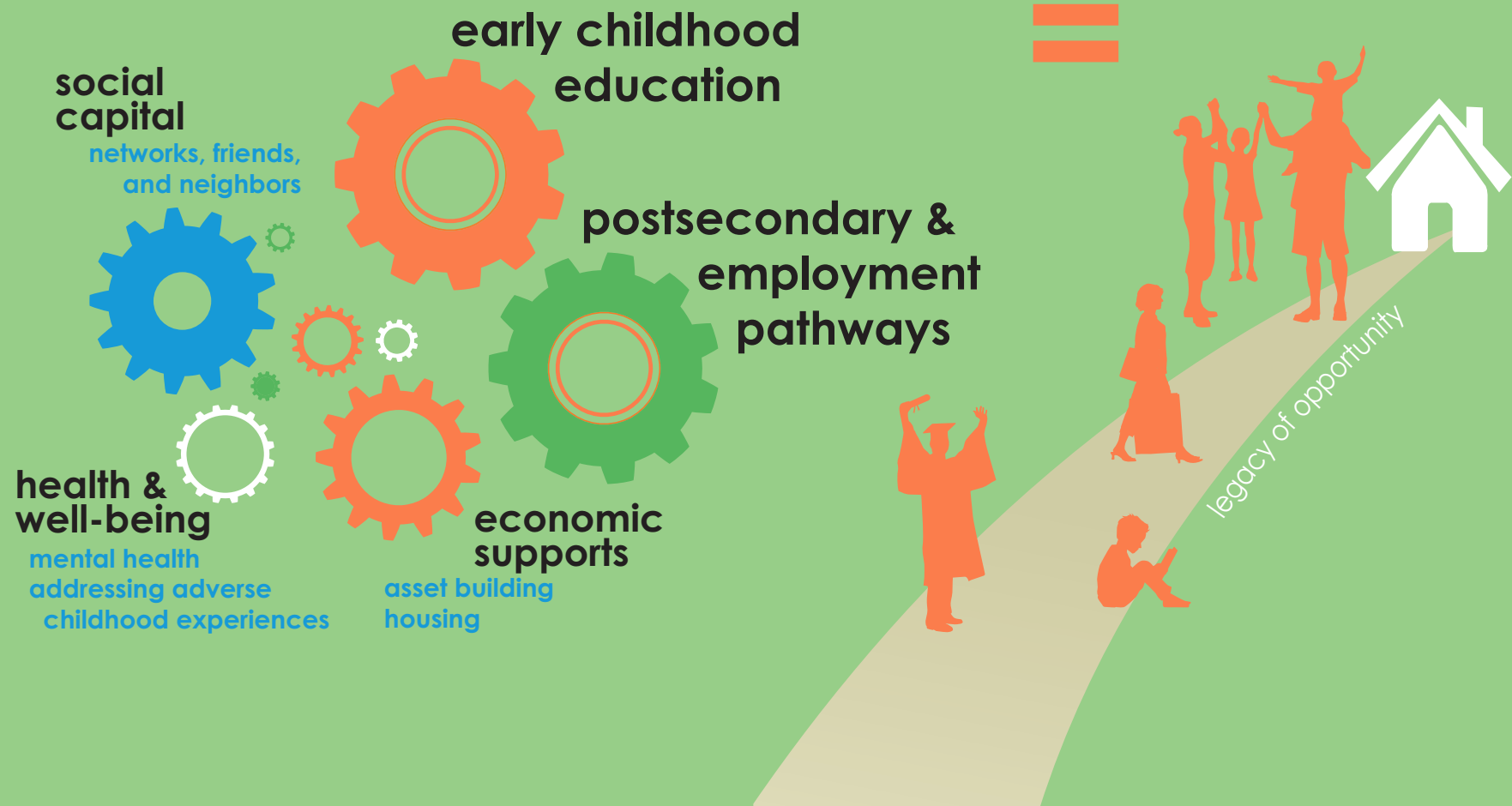
Animal and human mothers exhibit reduced physical reactivity to acute social and cognitive stressors.

During the postpartum period, in both mothers and fathers, there is structural growth in these **emotion regulation circuits.**

There is also increased activation while listening to infant cries in the prefrontal regions.

Mothers with high levels of oxytocin also had reduced amygdala reactivity to negative emotional stimuli.

**Two-generation approaches** put the **WHOLE FAMILY** on a path to economic security.



web: [ascend.aspeninstitute.org](http://ascend.aspeninstitute.org)

 @aspenscend

 /aspenscend



# Key Components of 2-Generation Approaches

**Education**

**Economic Supports**

**Health & Well-Being**

**Social Capital**

# Education

10% of those with a bachelor's degree are poor.

>30% of those with a HS diploma are poor.

More maternal education tends to yield better kindergarten school readiness.

## Problems:

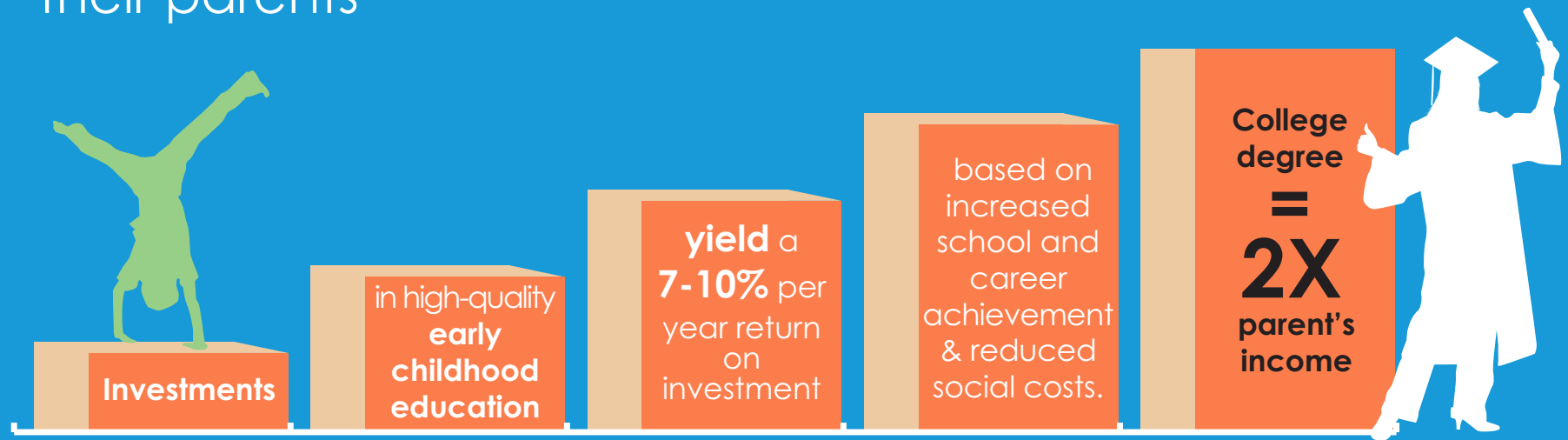
Adult education tends to view children as a barrier to participation.

Childhood education tends to view parents merely as facilitators of children's learning.

We need whole-family approaches.

# Education

Return on investment in education for children AND their parents



# Economic Supports

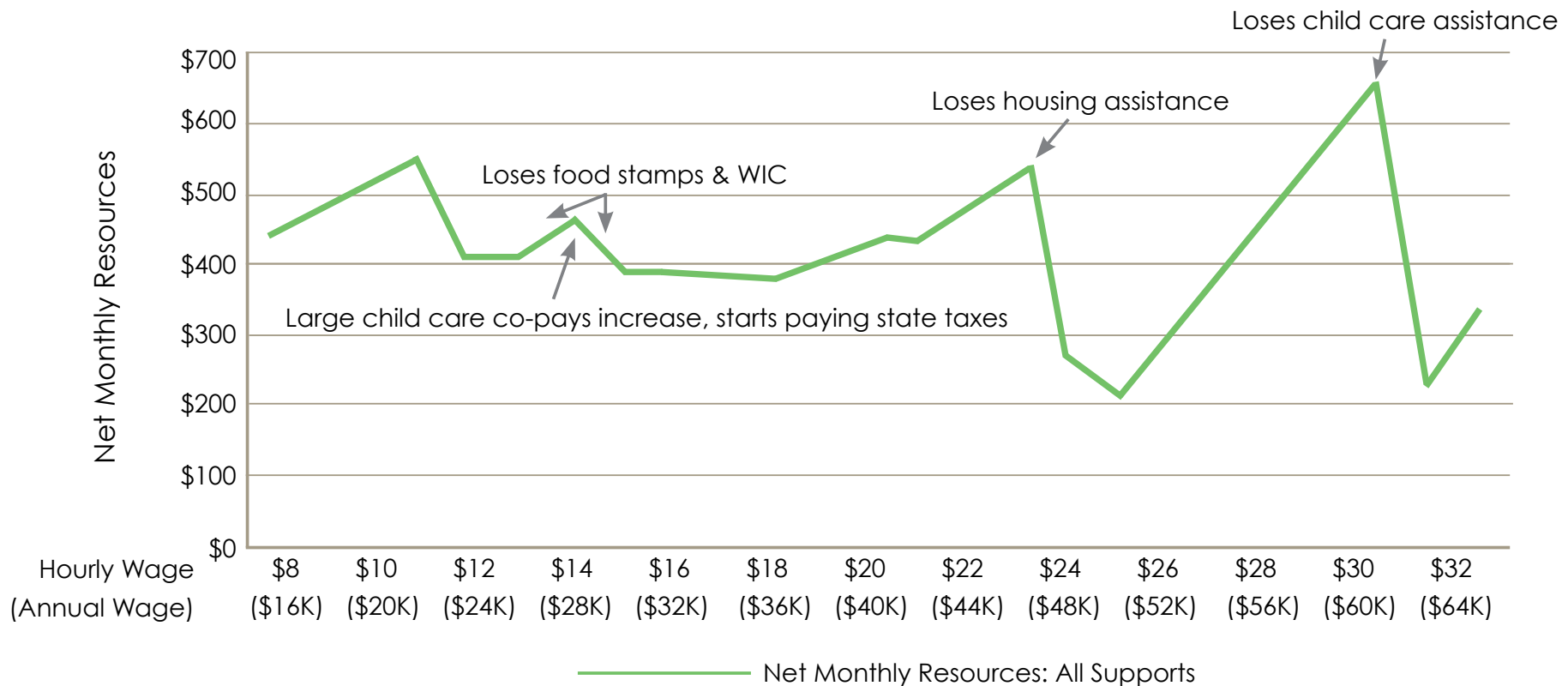
Supports allow parents to pursue skill-building and education...leading to better jobs and long-term financial stability.

Housing  
Transportation  
Financial Education and Asset-building  
Tax Credits  
Child Care Subsidies  
Student Financial Aid  
Health Insurance  
Food Assistance

The United Kingdom's War on Child Poverty

# Economic Supports

Income Growth and Impact on Available Economic Supports

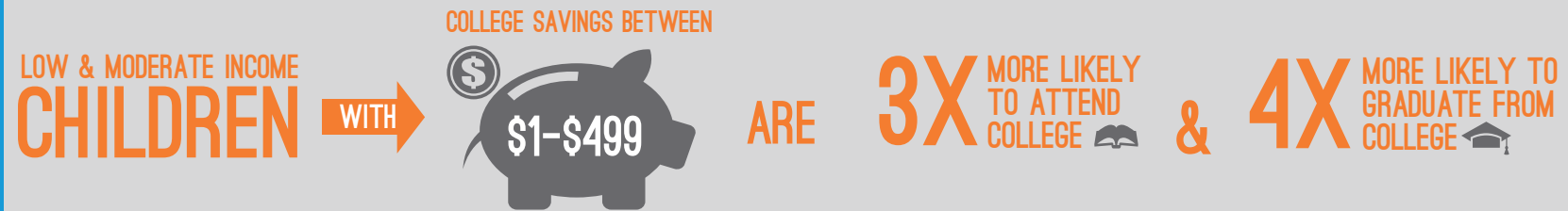


Crittenton Women's Union. (2009). "Combined Monthly Resources (earnings plus government work supports) [chart]." Retrieved from: [http://www.liveworkthrive.org/research\\_and\\_tools/reports\\_and\\_publications/The\\_Cliff\\_Effect\\_Experience\\_Voices\\_of\\_Women\\_on\\_the\\_Path\\_to\\_Economic\\_Independence](http://www.liveworkthrive.org/research_and_tools/reports_and_publications/The_Cliff_Effect_Experience_Voices_of_Women_on_the_Path_to_Economic_Independence).



# Economic Supports

## Children with Savings Accounts More Likely to Attend College



CFED. (2013). *Investing in Hope: A two-generation approach to asset building*. Washington, DC.

# Health & Well-Being

Consequences on:

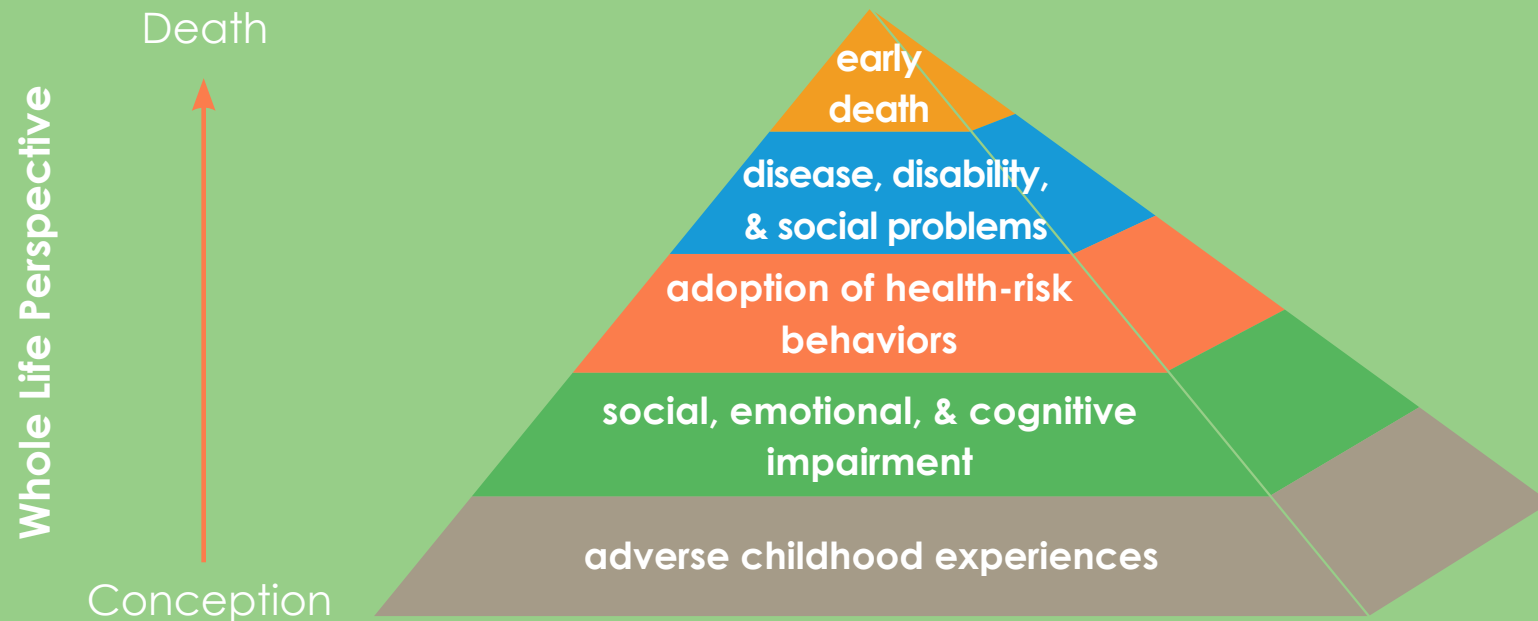
Physical Health

Mental Health

Learning

# Health & Well-Being

## Childhood Trauma has Long-Term Effects



Randa, R. F. & Felitti, V. J. *The Adverse Child Experiences Study*. Retrieved from <http://acestudy.org>

# **Social Capital**

**Peer Support**

**Contact with Family, Friends & Neighbours**

**Participation in Community Organizations**

**School and Workplace Contacts**

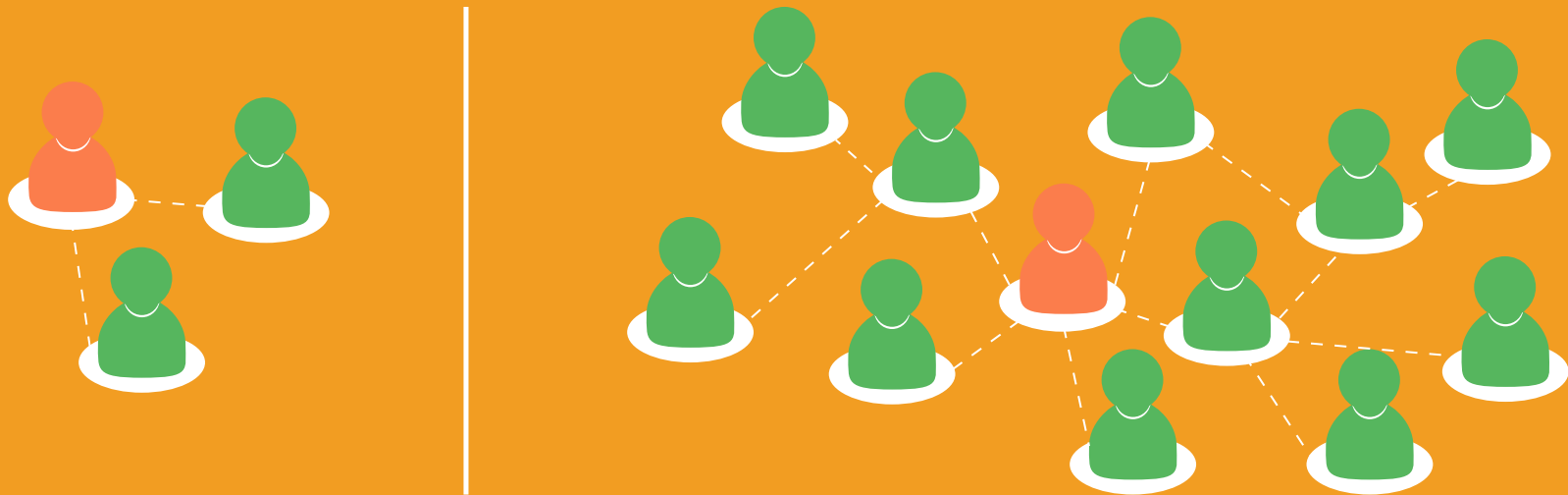
**Use of Case Managers & Coaches**

**Social Networks**

**Mental Health Services**

# Social Capital

As Networks Expand, So Do Resources and Support





# Applications

**Build  
Buy  
Broker**



Programs

Policies

Systems

Research

I wish leaders and policy makers understood first that an investment in parents and children struggling to achieve economic security is just that — an **investment**. As a country, we need to think long term. I also believe that that investment is not enough. Families struggling to achieve economic security need basic assistance, but they also need an advocate by their side: **mentors**, people to whom they can turn for advice and perspective. I have found that decisions I made for my family over time had less to do with seeking basic assistance and more to do with learning how to manage the resources I was given and make **good lifelong decisions**. I have seen people in my immediate family growing up (six siblings) make critical decisions with little information or guidance. Our parents didn't know how to guide us, so we were also on our own; it is a vicious cycle. It took me 10 years to really get to a place of economic security even with my education. It doesn't happen overnight, and it takes patience, commitment, and the ability to delay gratification to see the bigger picture.

— Monique Rizer

Chief of Staff at Be The Change; 2000 Gates Millennium Scholar

**Reach  
Out  
& Read®**



where great stories begin™



## Prescription for Reading

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Age: \_\_\_\_\_



**R** *Read Books*

- ☐ Every night at bedtime
- ☐ For \_\_\_\_\_ minutes every day
- ☐ As needed

Refills: as requested at local public library

Signature: \_\_\_\_\_

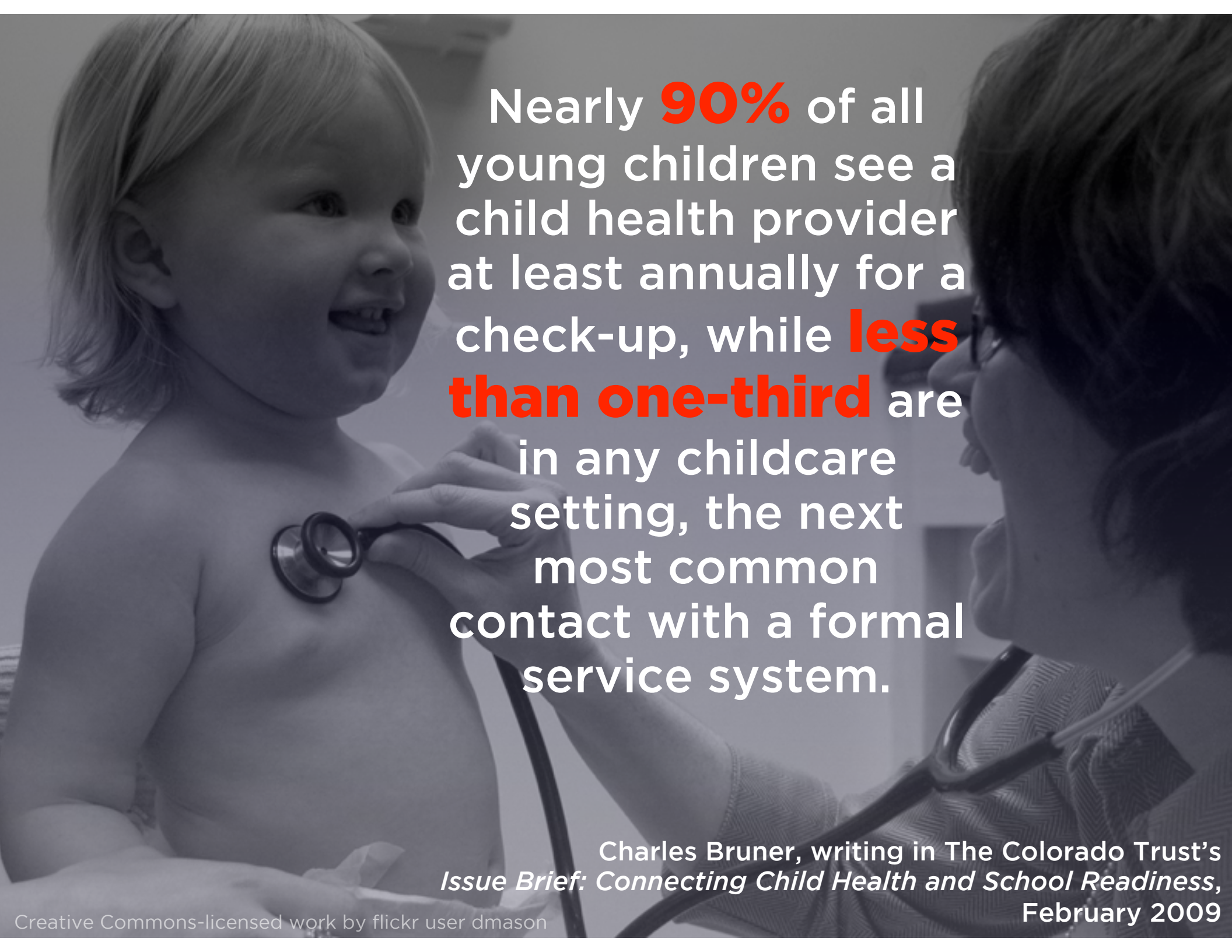
Dipesh Navsaria, MPH, MSLIS, MD

Pediatrician & Occasional Children's Librarian

*Families:* Please visit [reading.pediatrics.wisc.edu](http://reading.pediatrics.wisc.edu) for more information on the joy of sharing books together and how it can make a huge difference in your child's life.

of sharing books together and how it can make a huge difference in your child's life.  
Families: Please visit [reading.pediatrics.wisc.edu](http://reading.pediatrics.wisc.edu) for more information on the joy





Nearly **90%** of all young children see a child health provider at least annually for a check-up, while **less than one-third** are in any childcare setting, the next most common contact with a formal service system.

Charles Bruner, writing in The Colorado Trust's  
*Issue Brief: Connecting Child Health and School Readiness*,  
February 2009

衆瞽  
摸象之圖

a book giveaway

developmental  
surveillance

an educational  
intervention

a toxic stress-  
buffering routine

a public health  
approach

Reach  
Out  
& Read®



a relational  
assessment tool

**It's All These Things.**

a parental  
capacity-builder

a scalable,  
evidence-based  
model



owl.li/TDMfc

# THE ELEPHANT IN THE CLINIC

EARLY LITERACY AND FAMILY WELL-BEING



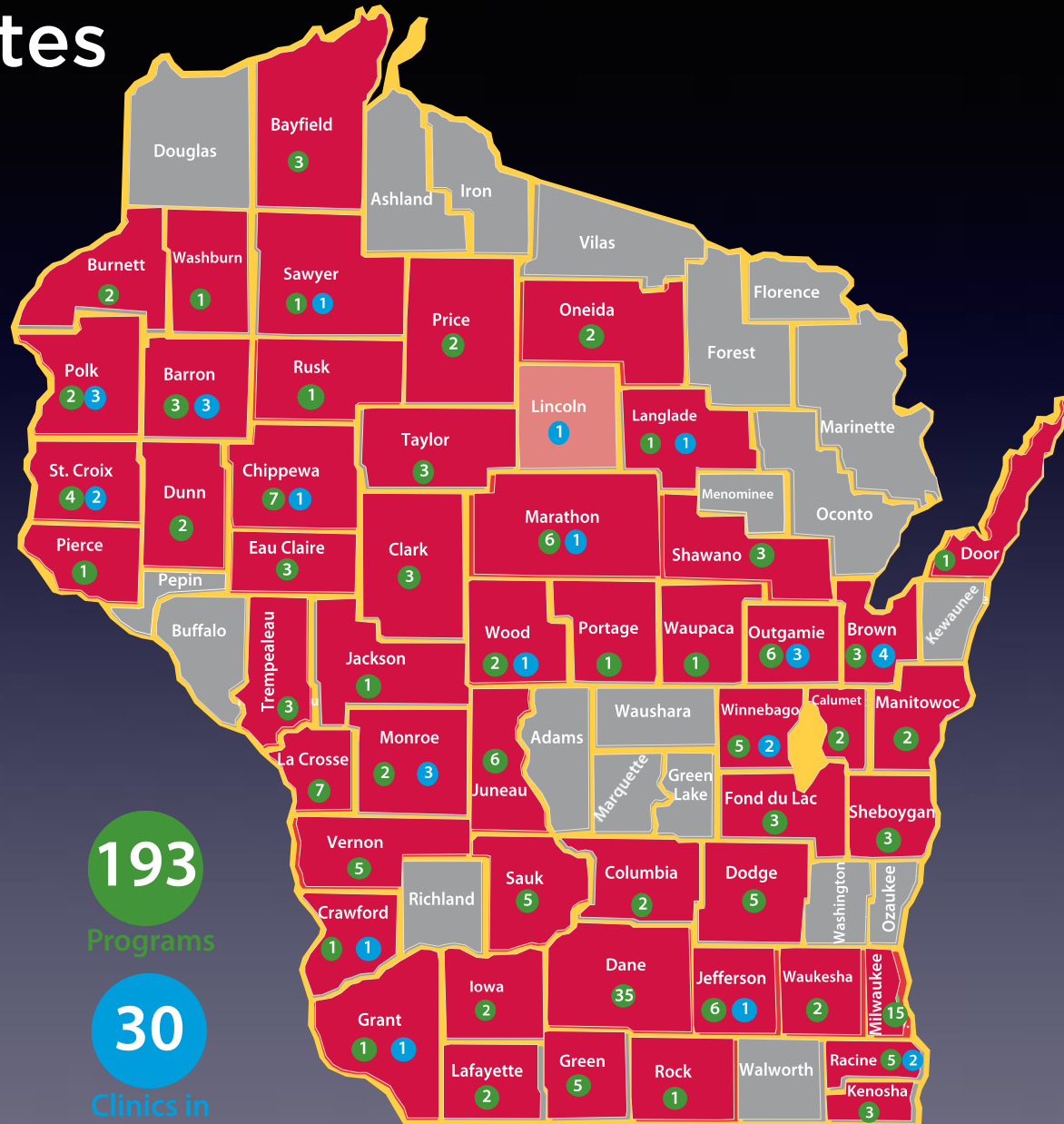
DIPESH NAVSARIA, MPH, MSLIS, MD  
AMY SHRIVER, MD



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where great stories begin™

# December 2010 Coalition founded ~50 sites

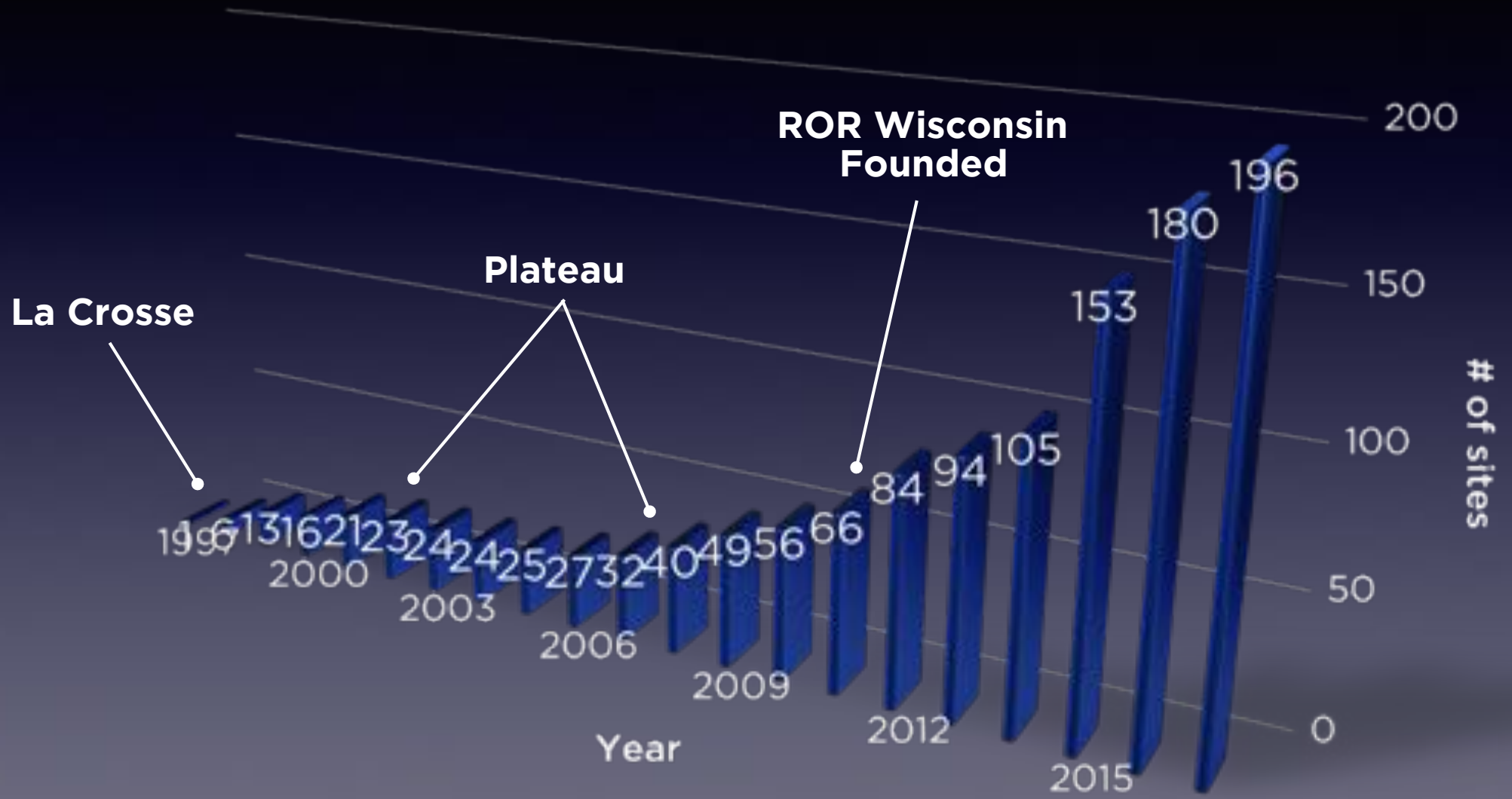


193  
Programs

30  
Clinics in  
application

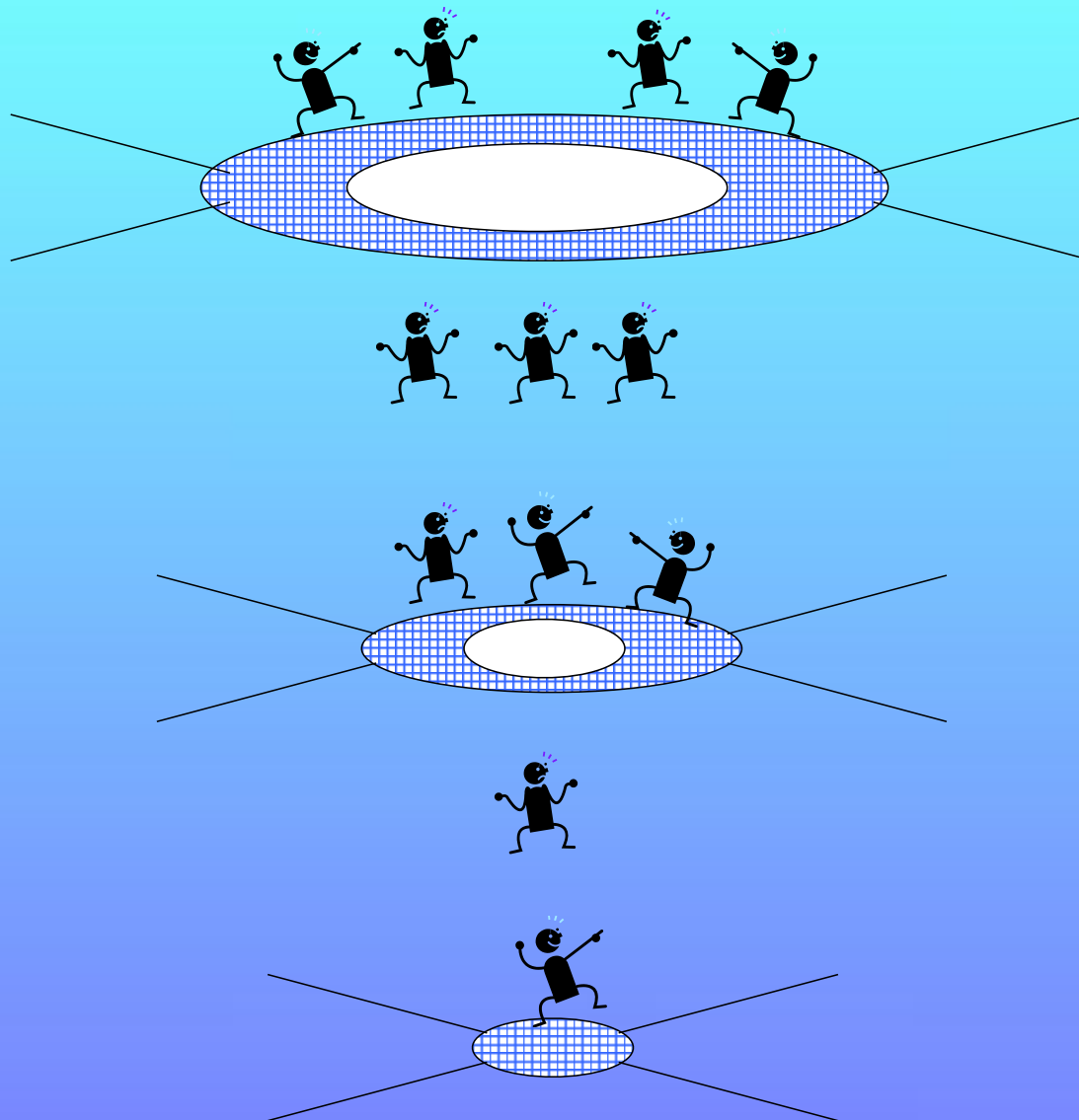
April  
2016

# REACH OUT AND READ IN WISCONSIN





# Using A Public Health Approach to Building Healthy Brains



## Universal Primary Preventions

Anticipatory Guidance  
Bright Futures  
Reach Out and Read  
Social Supports  
Relational Health  
High Quality Child Care

Everyone

## Screening/Targeted Interventions

Developmental/Risk Screening  
Home Visiting  
Head Start  
Parenting Education/Support  
Early Intervention

At-risk

## Evidence-Based Treatments

CPP, COS, PCIT, TB-CBT  
Intensive Home Visiting  
Intensive Parenting Education  
Care Coordination

Symptomatic

# 5 Rs of Early Childhood Education

## ROUTINES

help children know what to expect of us & what is expected of them

## READING

together daily

## RHYMING

playing and cuddling

## REWARDS

for everyday successes; praise is a powerful reward

## RELATIONSHIPS

reciprocal and nurturing: the foundation of healthy child development





**“In order to develop—intellectually, emotionally, socially, and morally—a child requires participation in progressively more complex reciprocal activity, on a regular basis over an extended period in the child’s life, with one or more person with whom the child develops a strong, mutual, irrational, emotional attachment and who is committed to the child’s well-being and development, preferably for life.”**

**— Urie Bronfenbrenner**

**“Every kid needs at least one adult who is crazy about him.”**



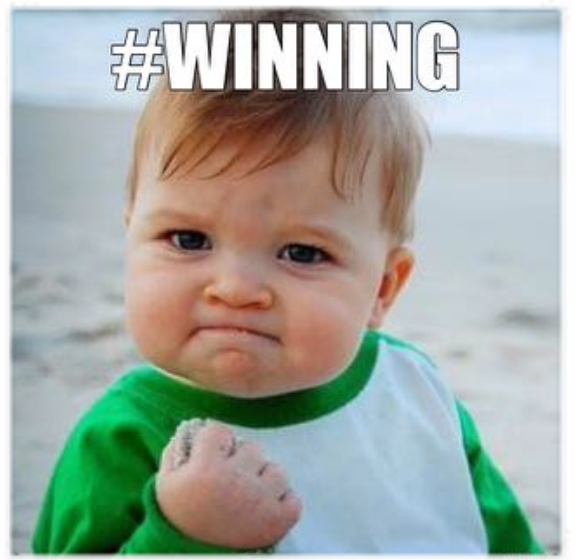
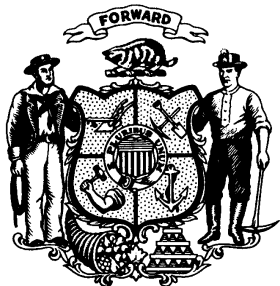
*formerly the Partnership for America's Economic Success*

Business leader organizations in many states have started supporting proven investments in early childhood. ReadyNation has sponsored business leader summits and provided other types of assistance to support business leader engagement in over half the states. There are also many other business groups in the states working in early childhood.

Learn more about our [National Network](#) of business organizations.

Looking for data on your state that illustrates both the status of children and the power of early investment? We recommend the following:

AMERICA'S PROMISE  
ALLIANCE



sin  
RE



LRB-3486/1

SRM:eev:ev

## 2013 SENATE RESOLUTION 59

*Resolved by the senate, the assembly concurring, That* policy decisions

enacted by the Wisconsin state legislature will acknowledge and take into account the principles of early childhood brain development and will, whenever possible,

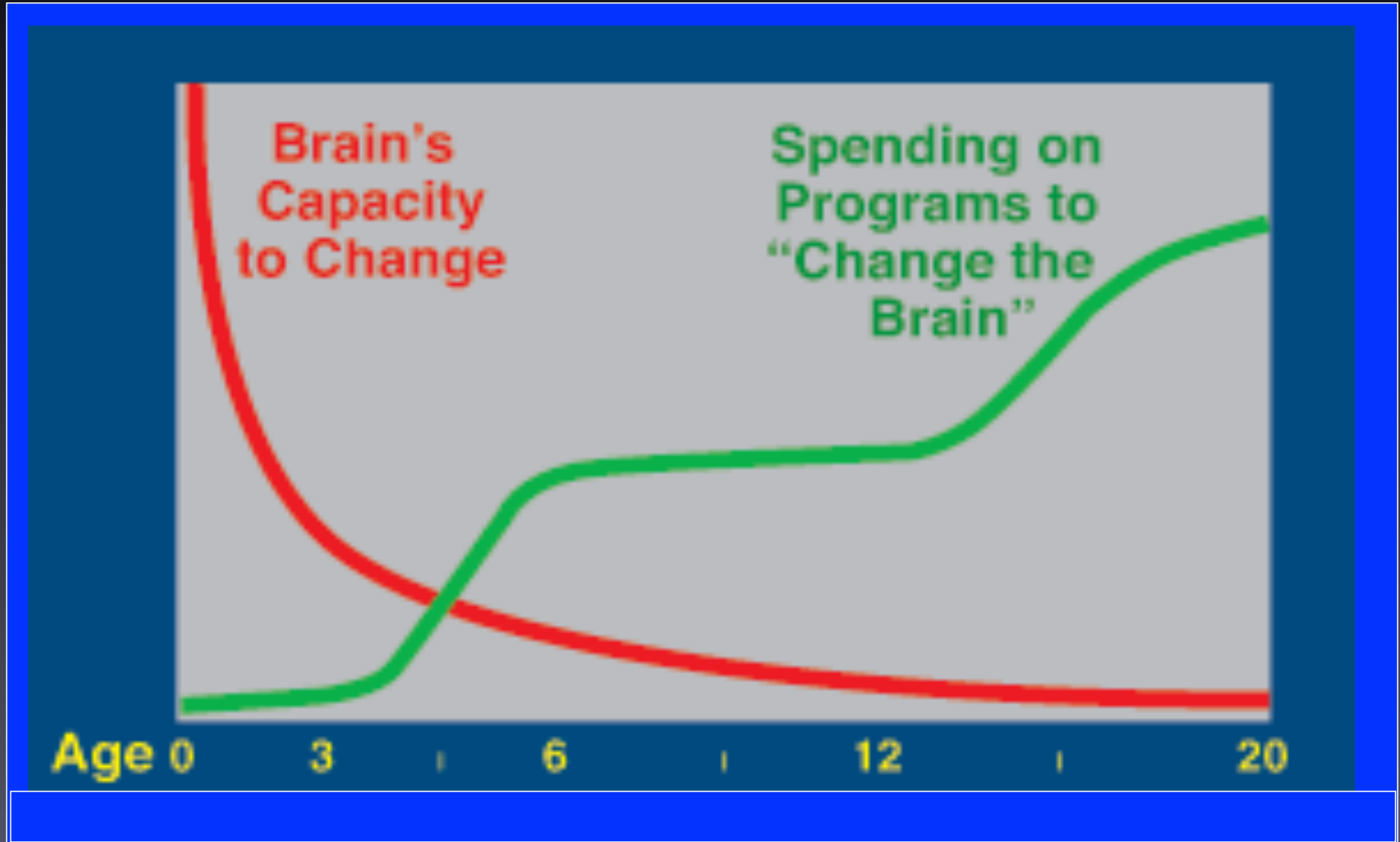
November 4, 2013. Introduced by Senators LUTHE, ORSING, HARRIS, DALLING, LEHMAN, L. TAYLOR, RISSER and C. LARSON, cosponsored by Representatives note the role of early intervention and investment in early childhood years as BALWEG, PASCH, KESTELL, SARGENT, MASON, JOHNSON, BARNES, WRIGHT, OHNSTAD, GOYKE, WACHS, SPIROS, KRUG and HULSEY. Referred to Committee on important strategies to achieve a lasting foundation for a more prosperous and Senate Organization.

sustainable state through investing in human capital.

(END)

**Relating to:** early childhood brain development.

# Public Investment in Children by Age



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THE  
END

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